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Tustin, CA 92782

EXAMINER

HARRINGTON, ALICIA M

ART UNIT PAPER NUMBER

2873

DATE MAILED 07/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/736,110

Examiner

Alicia M Harrington

Applicant(s)

SCHWARZ, PETER

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
- 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
- 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Drawings

The drawings are objected to because in figure 1, g should as discussed at page 27, line 12. And figure 7 has parts without textual labels. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the

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printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it claims language (ex. Means) and contains more than 150 words. Correction is required. See MPEP § 608.01(b).

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.
- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

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- (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). **A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention).** In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). **A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail.** However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an

abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e)

- (k) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

The disclosure is objected to because of the following informalities: The specification contains numerous description of the invention in the very beginning (perceived summary of invention) which should be in the detailed description section of the specification, the heading "we claim or I claim" is missing from the specification, and general headings throughout the specification is needed as described above.

Appropriate correction is required.

Claim Objections

Claim 34 objected to because of the following informalities: the word two is misspelled in line 2 (tow). Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-4, 7, 10, 13, 20, 21, 29 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3, the phrase "**may also**" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 7, the phrase "etc" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "etc"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding claim 20, the phrase "and the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "and the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim 4 inherits its indefiniteness from claim 3 from which it depends.

Claims 10, 13, 29 inherit its indefiniteness from claim 7 from which it depends.

Claim 21 recites the limitation "said spectral means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 33 recites the limitation "with the Fresnel reflection" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claims 4, 7, 10, 13, 20, 21, 29 and 33 will be examined as best understood by the Examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this

subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a)

Claims 1-10, 12-14, 17-18, 22,24,26,27,29,30,35, 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Wunderman et al (US 6,122,042).

Regarding claim 1-3 and 36, Wunderman discloses an apparatus for identifying properties of material comprising a first optical means (30; col. 5, lines 4-15, col. 6, lines 20-25); second optical means (#34, see figure 1a; col. 5, lines 15-20); a control and evaluation means (signal processor; col. 5, lines 29-34 and col. 17, lines 20-30); an output means (via leads to computer/display); where the illumination means comprises at least one light source that is a LED (col. 5, line 17) whereby light emitted by the illumination means is configured such that it spectral characteristic preferably comprises components of visible (col. 6, lines 23-30); whereby a filter means (col. 7, lines 25-30) is provided which is arranged in the path of radiation between the light source and photo sensor elements, and wherein the evaluation means evaluates said reflected light and derives at least color or fluorescence (col. 6, lines 20-35; col. 7, lines 25-30 col. 8, lines 35-45). Although, a filter was not placed between the LED light source and detector (gloss measurer), it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a filter between the LED light source and photo detector to prevent/absorb unwanted light from reaching the detector.

Regarding claims 4-5, there are several characteristic values and parameters of the surface or substance (col. 8, lines 35-62 and 65-67).

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Regarding claim 6, the characteristic values are characteristic of the spectral reflectivity at one wavelength band each (col. 8, lines 35-62).

Regarding claim 7, the illumination means comprises a plurality of LEDs (col. 5, lines 16-20 and col. 6, lines 20-47).

Regarding claim 8, the LED's differ in spectral emission (col. 8, lines 9-15 and col. 9, lines 12-25).

Regarding claim 9, radiation from the illumination means is emitted essentially uninterruptedly across the entire visible spectrum (col. 7, lines 25-30).

Regarding claim 10, the light source is a plurality of LEDs (col. 6, lines 20-30 and col. 7, lines 10-35).

Regarding claim 12, the control means controls the measurements sequence so that at least one fluorescent parameter is determined (col. 7, lines 19-22 and col. 8, line 35-62).

Regarding claim 13 and 30, the first optical means is controllable to emit light simultaneously, intervals of times, successively (col. 8, lines 9-15 and col. 9, lines 10-45) to emit light in a specified range.

Regarding claim 14, the first optical means is controllable to emit light simultaneously, intervals of times, successively (col. 10, lines 14-44 and col. 11, lines 50-55).

Regarding claim 17-18, the detector is a CCD or equivalent, as disclosed in col. 7, lines 35-40 (see figure 2b).

Regarding claim 22, the filter (col. 7, lines 25-30) transmits only light characteristic of the filter and blocks all other wavelengths of impinging light.

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Regarding claim 24, in col 6, lines 30-45, Wunderman teaches the output of the LED is linear the visible range

Regarding claim 26, the spectral measurement characteristics of the is dependent upon the spectral characteristics of the LED lights radiated on the object and the spectral sensitivity of the photo detector (CCD), where the stored data used to identify the objects is told by the output spectral response of the light and detector which yields a specific signature (spectral progression) of the object.

Regarding claim 27, in col 7, lines 25-35, Wunderman teaches the filter(s) are forward the detector to transmit and block some of the light impinging

Regarding claim 29, the light source is controllable to emit light simultaneously, intervals of times, successively (col 8, lines 9-15 and col. 9, lines 10-45).

Regarding claim 35, Wunderman teaches a temperature measuring means in the proximity of the LED in an embodiment (col. 9, lines 5-11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wunderman et al (US 6,122,042), applied in claim 8 above.

Regarding claim 15-16, Wunderman discloses the first and second optical means is controlled to do measurements (for example: fluorescence) whether the LEDs all simultaneously or successively emitting. Wunderman states the control is based on a pattern (col. 8, line 14-17 and col. 10, lines 14-40) stored in the computer (memory). Although, Wunderman fails to specifically disclose the claimed pattern. It would have been obvious to one of ordinary skill in the art at the time the invention was made that Wunderman system can be controlled to produce several measurement in several with different combination of light emission, since it clearly suggested by Wunderman and applicant has not disclosed how the claimed pattern solves any state problem. Thus, it lacks criticality.

Claims 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wunderman et al (US 6,122,042), applied in claim 22 above.

Regarding claim 23, One of ordinary skill in the art knows a filter and detector spectral responses are typically based on a test sequence in which data derived from the detection of emission of the light source and subsequent detected emitted light is used to correct for deviation/fluctuations in signal during use of the system- official notice is take to this fact. The derived data is compared against a standard. Thus, the selective blocking of the wavelengths by a filter is based on the calibrated system information. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the filter properties based on a predetermined standard for the type of light source, since the standard would provide a basis for calibrating the light properties emitted.

Claims 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wunderman et al (US 6,122,042), applied in claim 27 above.

Regarding claim 28, Wunderman disclose implanting the system with filters. However, Wunderman fails to specifically disclose the filter is controllable to control the spectral properties. However, the uses of controllable (variable density or ND filters) forward a detector that detects multiple wavelengths of light is notoriously well known to the imaging art. Further, such implementation is known to help prevent unwanted signals from reaching the detector, as also taught by Wunderman (col. 7, lines 25-35). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made implement a controllable filter, since they are used forward detectors in the imaging art and since it allows the filter to be versatile (tuned to several wavelength) in a system which produces multiple measurements.

Claim 25 and 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wunderman et al (US 6,122,042), applied in claim 1 above.

Regarding claim 25, the spectral measurement characteristics of the is dependent upon the spectral characteristics of the LED lights radiated on the object and the spectral sensitivity of the photo detector (CCD) with filter, where the stored data used to identify the objects is told by the output spectral response of the light and detector which yields a specific signature (spectral progression) of the object. Although, Wunderman fails to specifically disclose the characteristics are proportional to the light standard and visual sensitivity of the human eyes, the human eyes are truly sensitive to the three primary colors of light. Those sensor and the eye rods allow humans to discern the many colors. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce a spectral characteristic that is proportional

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to the light standard and eye sensitivity, so that the measurement can be observed in some instances

Regarding claim 33, Wunderman fails to specifically disclose the angle of the first optical relative to the measurement surface and angle of the second optical means relative to the measurement surface are different. However, the Examiner takes official notice that optical measurement system are designed where the light is perpendicular to the measurement surface and the detector is at smaller angle relative to the measurement surface. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wunderman system as claimed, since it's a well known optical measurement system design.

Claims 1- 11, 17, 31,32, 34, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berends (US 5,377,000).

Regarding claims 1 and 36, Berends disclose a portable appearance (col. 1, lines 65-67, figure 5 and 13B) measuring apparatus (quality of a surface) comprising a first optical means (84 and 124 (in 248)), second optical means (#58 and 114; see figure 2 and 11); a control and evaluation means (#314; col. 8, lines 41-67, col. 10, line 30-50), an output means (via leads to computer/display); where the illumination means comprises at least one light source that is a LED (#124) whereby light emitted by the illumination means is configured such that its spectral characteristic preferably comprises components of visible (#84,col. 2, lines 35-40); whereby a filter means (222) is provided which is arranged in the path of radiation between the light source outputting the visible spectrum and photo sensor elements; and wherein the evaluation means

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evaluates said reflected light and derives therefrom at least color and/or gloss (col. 1, lines 65-67). Although, a filter was not placed between the LED light source and detector (gloss measurer), it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a filter between the LED light source and photo detector to prevent/absorb unwanted light from reaching the detector.

Regarding claims 2-4, the device detects color and gloss (col. 2, lines 65-67).

Regarding claims 5-6, the color is determined by the 21 wavelength characteristics of the reflected light (col. 10, lines 30-45, col. 11, lines 35-40).

Regarding claim 7, the illumination means comprises an incandescent lamp and LED (see col. 2, lines 5-20 and 37-40).

Regarding claim 8-9, the LED controlled (col. 8, line 65-67) to generate green light only (col. 11, lines 60-67) and the incandescent light is a light source that generates light in the entire visible spectrum (col. 6, lines 5-15). However, it is well known in the art to implement an LED source controlled to emit light in the entire visible spectrum and used for gloss measurements- the Examiner takes official notice to this fact. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the LED light source as source emitting across the visible spectrum since it is an inexpensive light source and it is well known in the art.

Regarding claim 10, as discussed above, the illumination means comprises an incandescent light and a single LED as the light source. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the illumination means with a plurality of LEDs since LED may be combined as light source and tuned to a desired

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wavelength band or wavelength range while having high light intensity at narrow bandwidths and its an expensive light source to implement in optical measurement system.

Regarding claim 11, the incandescent light source is implemented, as discussed above in claim 1. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a halogen light source since it has been held to be within the general skill of a worker in the art to select a known material on its suitability for the intended uses as a matter of obvious design choice. In re Leshin, 125, USPQ 416.

Regarding claim 17 and 34, twenty-one photo sensor elements are provided (col. 6, line 15-20 and col. 7, lines 50-65 and col. 8, lines 9-25) to output signal to ascertain the optical parameters of the surface.

Regarding claim 31, a glass diffuser (90) and aperture means (96) are implemented as a part of the first optical means (col. 9, lines 40-50).

Regarding claim 32, the evaluation means uses an algorithm stored in memory to evaluate the measurements (col. 11, lines 30-50).

Claims 18-21 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berends (US 5,377,000), as applied above in claim 1, in view of Rioux (US 5,701,173).

Regarding claim 18, Berends discloses two one photo sensing elements and larger area photodiode as it second optical means. Berends fails to specifically disclose an area array CCD as claimed. Although, it is well known in the art, as taught by Rioux

In the same field of endeavor, Rioux disclose an optical system for measuring color and profiles of a surface where the detector is a CCD array (col. 4, lines 30-35). Thus, it would have

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been obvious to one of ordinary skill in the art at the time the invention was made to modify Berends, as taught by Rioux, since it is known in the measurement of color and profiles, and Rioux system generates less noise.

Regarding claim 19-20, Berends fails to specifically disclose a spectral means as claimed. Although, it is well known in the art, as taught by Rioux

In the same field of endeavor, Rioux disclose an optical system for measuring color and profiles of a surface where the detector is a CCD array (col. 4, lines 30-35) where a wedge shaped element splits the light into Red, Green and Blue (col. 4, lines 30-35). The system is designed such that the spectral means (36) is in the radiation path between the illumination means (12) and photo sensor (28). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Berends, as taught by Rioux, since it is known in the measurement of color and profiles, and Rioux system generates less noise.

Regarding claim 21 and 37, Berends discloses two one photo sensing elements and larger area photodiode as its second optical means. Berends fails to specifically disclose an area array CCD with light deflection as claimed. Although, it is well known in the art, as taught by Rioux.

In the same field of endeavor, Rioux disclose an optical system for measuring color and profiles of a surface where the detector is a CCD array (col. 4, lines 30-35 and 40-60) and light impinges upon the array in lines of Red, Green and Blue via a wedge. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Berends, as taught by Rioux, since it is known in the measurement of color and profiles, and Rioux system generates less noise.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Keane (US 4,866,355) discloses a combined gloss and color measurement instrument;
Romano et al (US 6,024,020) discloses a fluorescence dot area meter for measuring a halftone dot area on a printing plate;

Alguard (US 4,699,510) discloses a color sensor; and


Mukherjee et al (US 5,991,021) discloses a nonlinear spectrophotometer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M Harrington whose telephone number is 703 308 9295. The examiner can normally be reached on Monday - Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 703 308 4883. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 7724 for regular communications and 703 308 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

Alicia M Harrington
Examiner
Art Unit 2873

AMH 
July 25, 2002

